

Understanding and improving the sustainability of agro-ecological farming systems in the EU – introducing the UNISECO project

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Context and objectives

There is an increased awareness that agro-ecological farming systems (AEFS) are fundamental for sustainable food production in the future. The key dilemma is how to produce public goods whilst having viable production of private goods, securing economic and social sustainability at a farm level, which is not overly dependent on public funds.

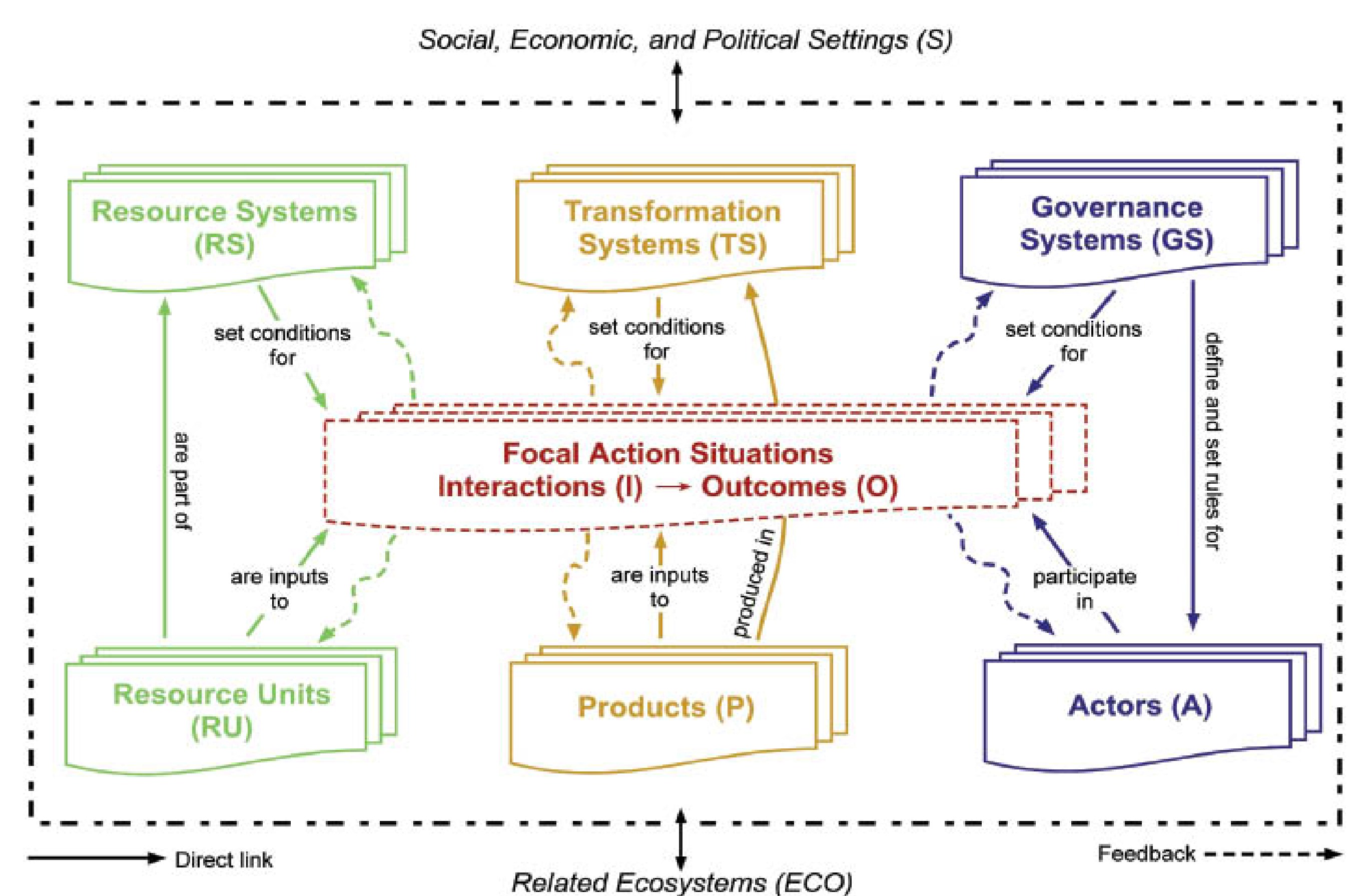
The overarching ambition of UNISECO is to address this key dilemma and to strengthen the sustainability of EU farming systems, through co-constructing improved, practice-validated strategies & incentives for the promotion of agro-ecological approaches. UNISECO will:

- enhance the understanding of socio-economic and policy drivers and barriers for further development and implementation of agro-ecological approaches in EU farming systems to facilitate more effective management strategies for European agriculture;
- operationalise a socio-ecological systems framework that integrates external settings into a sustainability assessment of farming systems, paying particular attention to the role of different types of actors and their roles in sub-systems;
- provide a methodological toolkit to assess the environmental, economic and social impacts of innovative strategies and incentives for AEFS at farm and territorial levels.



Theoretical framework

Adapted socio-ecological system framework



Key aspects of the framework for sustainability assessments of AEFS

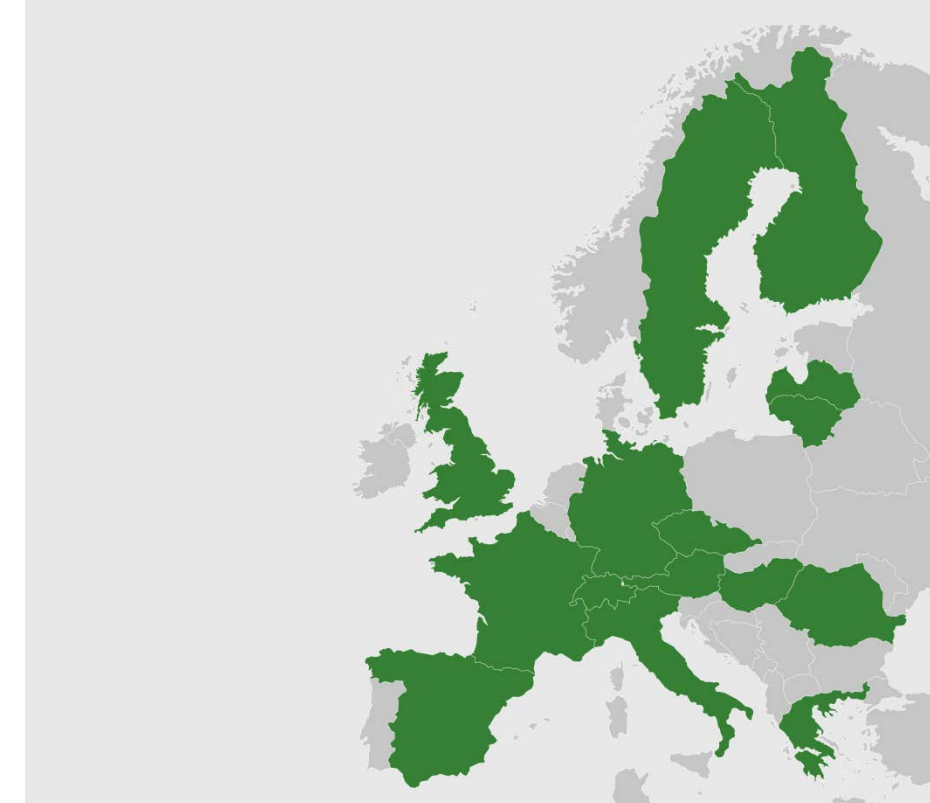
- Captures sustainability problems related to transformation activities and relationships between actors along the food system
- Captures strong integration with supply chains, key role of formal policies and the strong market orientation of most farming systems
- Incorporating consumers wishes, economic constraints, prices competition and market strategies

Main methodological approaches

- Review of drivers & barriers and participatory scenario development
- Empirical data collection in case studies and co-construction of knowledge and management strategies in 15 European countries
- Farm level assessment with participatory decision support tools (Cool Farm Tool, SMART Farm Tool) to analyse performance of AEFS and sustainability trade-offs of innovative strategies and incentives
- Territorial assessments of innovative strategies and incentives for AEFS with cutting edge biophysical and socio-economic models (e.g. BioBam and SOLm)
- Analysis of governance structures, market incentives & policy instruments supporting AEFS

Transdisciplinary research approach put into practice through three key mechanisms:

- Consortium composition (representing different relevant scientific disciplines and actors)
- Including participatory methods in all project phases
- Setting up knowledge sharing platforms (Multi-Actor Platforms (MAPs) and knowledge hub)



Tab 1: Case study countries

Intended impacts

- Improved methodological capacity to assess the sustainability of AEFS
- Enhanced integrated capacity and knowledge sharing to develop viable long term strategies for AEFS
- Co-constructed novel and effective market mechanisms and policy instruments for delivering public goods through economically viable AEFS
- Improved knowledge base of agro-ecological farming in the EU for use by policy-makers with at EU, national and regional levels, advisors, farmers, value chain actors and consumers